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A New Genus and Species of Phlaeothripidae (Thysanoptera) Harmful to Persimmon from Japan

With 3 Text-figures

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ABSTRACT A new genus and species, *Ponticulothrips diospyrosi* gen. et sp. nov., infesting cultivated persimmons, is described and illustrated. The new genus is related to *Liothrips*, but has an incomplete maxillary bridge consisting of a pair of apically furcate maxillary guides, cheek spines and a foretarsal tooth in both sexes.

Since the year 1975, an unrecorded phlaeothripine thrips has occurred in Okayama, western Japan, which is harmful to the persimmon plantation. It forms the marginal roll galls (ANANTHAKRISHNAN, 1978) on young leaves, and injures both leaves and fruits of the Japanese persimmon, *Diospyros kaki*, and the area infested by the thrips has expanded more and more with years (HENMI, 1979).

This species was once regarded as a member of the genus *Hoplothrips*, and later, as an unknown species of the genus *Liothrips* by Dr. SAIKAWA (1978, pers. comm.). However, the species has some generic characteristics different from *Liothrips*. Although PRIESNER (1960) combines the *Hoplothrips*-group and *Liothrips*-group in the subtribe Hoplothripina of the tribe Hoplothripini, these two groups are easily separable biologically. The former is mycophagous and has red pigments in young stages, while the latter sucks living plant juices and has yellowish larval and pupal stages. The present species is phytophagous having also yellow hypodermal pigments in its larvae and pupae.

Ponticulothrips gen. nov.

Medium-sized dark thrips allied to the *Liothrips*-group of the subfamily Phlaeothripinae.

Head longer than wide, constricted at base; vertex with transverse striae; cheeks almost parallel-sided, each with at least one spine; eyes well developed; postocular setae developed and situated near cheeks. Antennae eight-segmented; segment III with outer one sense-cone, IV with inner one and outer two sense-cones; sense-cones of VI longer than those of V which are longer than those of IV. Mouth-cone broadly pointed; maxillary stylets retracted mesad forming narrow V-shape; maxillary guides furcate apically making an incomplete bridge.

Pronotal major setae developed; epimeral suture complete; praepectus absent; metathoracic sternopleural suture present. Foretibiae unarmed; foretarsi with a short dull tooth in both sexes. Forewing parallel-sided, with about twenty duplicated cilia.

Pelta bell-shaped; abdominal segments II to VII each with two pairs of wing-retaining setae; tube nearly as long as head.

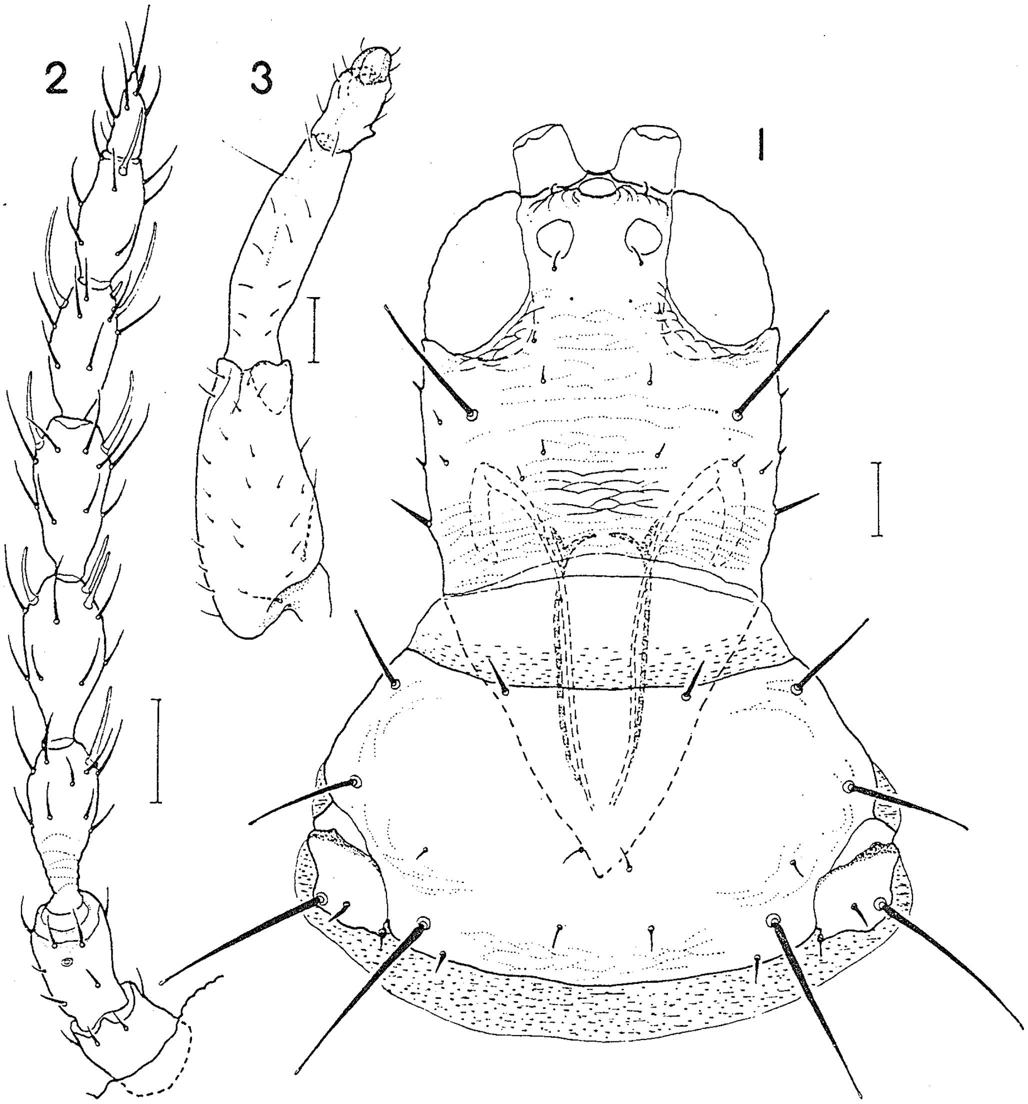
Type-species: *Ponticulothrips diospyrosi* sp. nov.

This new genus has some of the characteristics of *Liothrips*, that is, wing form, sense-cone number of antennae, chaetotaxy of abdominal segments and head sculpture, but can be distinguished by the presence of stout cheek spines, foretarsal tooth in both sexes, and the different lengths of sense-cone between intermediate antennal segments. *Phorinothrips* has similar arrangement of the antennal sense-cones and short dull foretarsal tooth as in *Sphingothrips*. However, the former has enlarged forefemora in female and short pronotum, and lacks cheek spines. The latter also has much enlarged forefemora and scale-like foretibial appendage in male. *Synergothrips* also resembles the new genus but differs from it in having the head much longer than wide and the numerous duplicated cilia of forewings.

The presence of maxillary bridge in this new genus seems not to be phylogenetically significant on a relationship with the tribe Haplothripini, because the new genus does not have a median constriction of forewings and well developed praepectal plates which are characteristic of the Haplothripini. Some of the members belonging to the subtribe Kladothripina of the Hoplothripini have a maxillary bridge, and moreover, one of them, *Akainothrips* has cheek spines (MOUND, 1971) like the new genus. However, the nature of forelegs and prothorax suggests that the new genus is less closely related to the Kladothripina than to the *Liothrips*-group.

Ponticulothrips diospyrosi sp. nov.

Female (*macropterous*). Uniformly dark brown to black; all tarsi and apical third of foretibiae lighter; tube darker; antennal segment I dark brown, II concolorous but apex paler; III to VI pale brown, apical half of VI shaded; basal third of VII



Figs. 1–3. *Ponticulothrips diospyrosi* gen. et sp. nov. —— 1. Head and prothorax, female. —— 2. Right antenna, female. —— 3. Left foreleg, female. Scales: 50 μm.

pale brown, the rest of VII and VIII brown; all prominent body setae and wing cilia pale brown; wing-retaining setae somewhat darker.

Head about 1.2 times as long as wide; postocular setae situated far from eyes, almost pointed at tip; cheeks little convex with a pair of short sharp spines at basal fourth of the cheek length; dorsum of head with transverse sculptures which are indistinct at the ocellar area. Eyes about two-fifths as long as head length; dorsal part of eye smaller than the ventral one, with slight median constriction laterally, without posterior enlarged facets. Anterior ocellus overhanged on a hump, 23 μm in diameter; posterior ocelli situated in front of the middle line across eye length and separated from eyes, 19–21 μm in diameter. Antennae moderately elongate; segment

IV as well as V and VI somewhat bulbous; segment VIII without basal construction; sense-cone formula of segment III to VI: $0+1$, $1+2$, $1+1$, $1+1^{+1}$.

Pronotum 0.7 times as long as head, smooth, with indistinct sculpture; all pronotal setae developed; anteromarginal setae variable in length, epimeral plates each with two short accessory setae; tips of these setae slightly dilated. Forefemora bulbous, weakly enlarged, with axillary area not sclerotized lateroventrally; foretibiae unarmed; foretarsi with a short dull tooth. Metanotal striae partially concentric, with clearly reticulated portions near the bases of hindwings. Forewings each with 22–25 duplicated cilia; subbasal setae slightly dilated at tips; B_2 the longest. Probasisterna and prospinasternum well developed; mesopraesternum not narrowed medially.

Pelta bell-shaped, varying in shape, with a pair of discal pores and weak sculpture; B_1 setae of abdominal segment IX longer than B_2, B_3 of the segment; these setae almost pointed at tips; tube slightly constricted medially; terminal hairs shorter than tube.

Measurements of a female in μm. Total body length 3,150. Head length 270, width across eyes 230, at base 190; eye length 110, width 70; pronotum length 190, width 380; forefemur length 210, width 10; foretibia length 220, width 55; foretarsus length 105, width 40; pterothorax length 460, width 530; forewing length excluding cilia 1,220, width 110. Pelta length 145, width 150; abdominal segment length (width): II 160 (500), IV 160 (500), VI 150 (470), VIII 130 (360), IX 120 (230); tube length 240, width at base 100, at apex 50.

Length of setae: Postoculars 88–100. Pronotal anteroangulars 60–65, anteromarginals 45–48, midlaterals 75–85, epimerals 128–130, posteroangulars 128–140. Forecoxals 48–65. Forewing B_1 73–83, B_2 88–118, B_3 73–83. Abdominal segment IX B_1 185, B_2 140–150, B_3 140–140. Anal hair (longest) 180.

Antennae: Total length approximately 540.

	I	II	III	IV	V	VI	VII	VIII
Length	40	55	93	90	85	70	63	40
Width	43	40	38	43	40	33	30	18
Sensecone Length			30	33–35	38–40	55–58	38	

Male (*macropterous*). Similar in colour and general structure to the female. Forefemora somewhat smaller; foretarsal tooth shorter; duplicated cilia of forewings fewer (17–20); forewing B_3 setae much shorter than B_2; B_2 setae of abdominal segment IX about one-third as long as B_1.

Measurement of a male in μm. Total body length 2,550. Head length 230, width across eyes 200, across cheeks 210, at base 180; eye length 90, width 60. Pronotum length 165, width 320; forefemur length 210, width 95; foretibia length 180, width 50; foretarsus length 95, width 40; pterothorax length 360, width 450; forewing length excluding cilia 1,050, width 100. Pelta length 120, width 130; abdominal segment length (width): II 130 (420), IV 130 (400), VI 130 (370), VIII 110 (290), IX 100 (200); tube length 230, width at base 95, at apex 40.

Length of setae: Postoculars 75–80. Pronotal anteroangulars 48–48, anteromarginals 25–28, midlaterals 58–58, epimerals 93–100, posteroangulars 83–93. Forecoxals 38–52. Forewing B_1 63–65, B_2 88–98, B_3 58–65. Abdominal segment IX B_1 168–180, B_2 58–63, B_3 145–158; anal hair (longest) 170.

Antennae: Total length approximately 530.

	I	II	III	IV	V	VI	VII	VIII
Length	50	58	80	83	78	73	60	43
Width	40	38	33	38	35	33	38	15
Sensecone Length			30	28–30	33–35	43–45	38	

Type-series. Holotype ♀, Sôja, Okayama, Japan, from a leaf gall of Japanese persimmon, *Diospyros kaki*, 19–VI–1981, leg. S. HASHIMOTO (OKAJIMA no. 205). Paratypes 12 ♂♂ 122 ♀♀ (including the allotype), same data as the holotype. The type-series is preserved in OKAJIMA's collection.

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